

Applicant(s): Shigeru Miki
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REMARKS

The last Office Action in the above-identified application and the references cited by the Examiner have been carefully considered. The claims have been amended in a sincere effort to define more clearly and more specifically features of applicant's invention which distinguish over the art of record.

At the outset, applicant wishes to call to the Examiner's attention a reference which he has become aware of, and that is Japanese Publication No. 2003-304438, published on October 24, 2003. This reference is cited in a Supplemental Information Disclosure Statement filed concurrently herewith, along with an English abstract (Patent Abstracts of Japan) of this reference and a full English translation of the reference. As will become evident from a discussion of the amended claims, this reference does not teach or suggest the features of the image recording apparatus and image recording method defined by the amended claims.

Original Claims 1, 5 and 6 have been rejected under 35 U.S.C. 102(b) as being anticipated by European patent application having Publication No. EP 0 909 084 (Takashi et al.). With respect to Claim 1, the Examiner contends that the Takashi et al. published application discloses an image recording apparatus in the form of a digital camera that has recording capability, and refers to the abstract of the Takashi et al. published application for disclosing this. The Examiner further contends that the Takashi et al. digital camera records image data on a recording medium, that is, a memory card 46, in which a recording area is divided into a plurality of unit areas, that is, a plurality of clusters for an optimal format, and in this regard, the Examiner again refers to the abstract of the Takashi et al. published application for disclosing this feature. The Examiner further contends that the Takashi et al. published application discloses that available unit areas can be dispersedly distributed, that is, stored in a sporadic fashion, and the Examiner refers to paragraph [0003] of the Takashi et al. application for disclosing this feature.

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The Examiner further contends that the Takashi et al. digital camera includes a detecting means in the form of a CPU 28 for detecting a capacity of the recording medium, that is, an inherent process when the optimal format is required, and the Examiner refers to step S65 for including this feature. The Examiner further contends that the Takashi et al. digital camera includes a setting means in the form of the CPU 28 for setting the unit areas to a larger size as the capacity detected by the detecting means is large, that is, performing an optimal format with larger clusters if a normal format is detected, and she refers to paragraph [0044] of the Takashi et al. application for disclosing this feature.

With respect to Claim 5, the Examiner contends that the Takashi et al. published application discloses a digital camera that is provided with the image recording apparatus defined by Claim 1.

The Examiner states that her reasons for rejecting Claim 1, which is an apparatus claim, are applicable to method Claim 6.

Claims 4 and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Takashi et al. published application. With respect to Claim 4, the Examiner acknowledges that the Takashi et al. published application does not disclose that the image data is motion image data formed by a plurality of screens of still images, and that the setting means sets the size of the unit area in consideration of a bit rate of the motion image data. However, the Examiner takes official notice that digital cameras are well known to record both still and motion image data, and that it would have been inherent to set the unit area, taking into consideration the bit rate of the motion image data in order to avoid synchronization problems between the bit rate of the imager output and the bit rate of the recording apparatus. Therefore, the Examiner concludes that it would have been obvious to store motion image data in the device disclosed in the Takashi et al. published application because the user could record events that require motion-image capture.

With respect to Claim 9, the Examiner contends that the Takashi et al. published

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application discloses a digital camera that is provided with the image recording apparatus.

Claims 2, 3, 7 and 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Takashi et al. published application in view of U.S. Patent No. 5,717,496 (Sato et al.). With respect to Claim 2, the Examiner acknowledges that the Takashi et al. published application does not disclose a specifying means for specifying a recordable number of frames, that is, still image files, of the recording medium on the basis of the capacity detected by the detecting means, that is, identifying the number of frames given the capacity of the memory card and a fixed-size for the still image files so that the setting means sets the size of the unit area on the basis of the recordable number of frames specified by the specifying means. Nevertheless, the Examiner contends that the Sato et al. patent discloses means for specifying a recordable number of frames of the recording medium, that is, means for identifying the number of frames given the capacity of the memory card and a fixed-size for the still image files, and refers to column 44, lines 15-22 of the Sato et al. patent for disclosing this feature. The Examiner further contends that the Sato et al. patent discloses that the number of frames that can be recorded can be retrieved by the user, and refers to column 44, lines 48-52 of the Sato et al. patent for disclosing this feature. Additionally, the Examiner contends that the Sato et al. patent discloses that the user can select the image file size, and refers to column 44, lines 31-33 of the Sato et al. patent for disclosing this feature. From this, the Examiner concludes that the Sato et al. patent would suggest the use of a setting means for setting the size of the unit area to conform to the selected file size. The Examiner states that it would have been obvious, therefore, to combine the teachings of the Takashi et al. published application and the specifying means disclosed in the Sato et al. patent in order to allow the user to select the compression mode to be used, that is, the fixed size of the image files, which determines the image quality of the reproduced image.

With respect to Claim 3, the Examiner contends that the Sato et al. patent discloses that the image data is compressed image data that is compressed by rendering a predetermined size a target, that is, the image data is compressed according to a user file size

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selection, and refers to column 44, lines 31-33 of the Satoh et al. patent for disclosing this feature. The Examiner further contends that it would have been inherent to identify the number of frames given the capacity of the memory card and a fixed-size for the still image files.

With respect to Claims 7 and 8, the Examiner contends that the combination of the Takashi et al. application and the Satoh et al. patent discloses a digital camera provided with the image recording apparatus.

The comments of the Examiner as to why she believes the pending claims of the subject application are unpatentable over the references cited in the Office Action are acknowledged and gratefully appreciated. It is respectfully urged that Claims 1-4 and 6, as amended, and Claims 5 and 7-9, as previously presented, patentably distinguish over the references of record and are allowable.

More specifically, Claims 1-4 have been amended to eliminate the “means plus function” language used in the original claims, and Claim 6 has been amended to define step (b) as setting each of the unit areas to a larger size as the capacity detected in the earlier step (a) is large.

Independent Claim 1 calls for an image recording apparatus that records image data on a recording medium in which a recording area is divided into a plurality of unit areas, and available unit areas can be dispersedly distributed. The image recording apparatus defined by Claim 1, as now amended, includes a detector for detecting a capacity of the recording medium, and a setter for setting each of the unit areas to a larger size as the capacity detected by the detector is large. Stated another way, and as defined by Claim 1, image data is recorded on a recording medium in which a recording area is divided into a plurality of unit areas and available unit areas can be dispersedly distributed. A detector detects a capacity of the recording medium. A setter sets each of the unit areas to a larger size when the capacity detected by the detector is large.

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Thus, when a recording capacity is large, a reduction in efficiency in the use of the recording medium is insignificant. Therefore, in accordance with the claimed invention, the size of the unit area is set to a large value in order to shorten a recording time period. On the other hand, when the recording capacity is small, it is necessary to consider the efficiency in the use of the recording medium as being more important than the recording time period, and therefore, in accordance with the claimed invention, the size of the unit area is set to a small value. Thus, it is possible to shorten the time required to record the image data and prevent the reduction in the efficiency in the use of the recording medium.

The Takashi et al. published application has been carefully reviewed, and it is respectfully urged that it does not teach or suggest the features of applicant's image recording apparatus as defined by Claim 1, as amended. More specifically, the Takashi et al. published application discloses that when an unused recording medium is attached to a digital camera, the number of sectors forming one cluster is changed from "four" to "sixteen". The Takashi et al published application does not teach or suggest the setting of each of the unit areas to a larger size when the detected capacity of the recording medium is large, as specifically defined by amended Claim 1.

The Examiner, on page 2 of the Office Action, comments that the Takashi et al. digital camera includes a CPU 28 which acts as a detecting means that detects a capacity of the recording medium, that is, an inherent process when the optimal format is required, and refers to step S65 disclosed in the Takashi et al. published application, and that the digital camera further includes a setting means, i.e., the CPU 28, for setting the unit areas to a larger size as the capacity detected by the detecting means is large, i.e., performing an optimal format with larger clusters if a normal format is detected, and the Examiner refers to paragraph [0044] of the Takashi et al. published application for disclosing this feature. However, applicant's careful review of the Takashi et al. published application finds that the digital camera disclosed in the Takashi et al. published application does not require carrying out an optimum formatting process as a result of detecting a capacity of the recording medium. In other

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words, the optimum formatting process is executed without referring to the capacity of the recording medium. This is contrary to the teachings of applicant's claimed invention, where the capacity of the recording medium is considered, the result being to shorten the time required to record the image data and to prevent the reduction of the efficiency in the use of the recording medium. The detector, as defined by Claim 1, of the image recording apparatus detects the capacity of the recording medium, and the setter, as defined by amended Claim 1, sets each of the unit areas to a larger size when the capacity detected by the detector is large.

Accordingly, it is respectfully urged that Claim 1, as amended, patentably distinguishes over the Takashi et al. published application and is allowable.

Independent method Claim 6 is similar in many respects to independent apparatus Claim 1, as discussed above. The claim defines applicant's image recording method that records image data on a recording medium in which a recording area is divided into a plurality of unit areas and available unit areas can be dispersedly distributed as including the steps of (a) detecting a capacity of the recording medium, and (b) setting each of the unit areas to a larger size as the capacity detected in step (a) is large.

As stated previously with respect to Claim 1, amended Claim 6 detects the capacity of the recording medium and sets each of the unit areas to a larger size when the detected recording medium capacity is large. The Takashi et al. published application does not disclose the steps set forth in amended Claim 6. As stated previously, the optimum formatting process executed by the digital camera disclosed in the Takashi et al. published application is executed without referring to the capacity of the recording medium. The advantage of detecting the capacity of the recording medium and setting the unit areas to a larger size if the detected capacity is large, in accordance with the claimed invention, allow the possibility to shorten the time required to record the image data and prevent the reduction in the efficiency in the use of the recording medium. Such steps, as defined by amended Claim 6, are not taught or suggested by the Takashi et al. published application. Accordingly,

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it is respectfully urged that Claim 6, as amended, patentably distinguishes over the Takashi et al. published application and is allowable.

Claims 2-5 and 7-9 depend directly or indirectly from amended independent apparatus Claim 1. As such, it respectfully urged that Claims 2-5 and 7-9 patentably distinguish over the Takashi et al. published application for the same reasons submitted with respect to amended Claim 1.

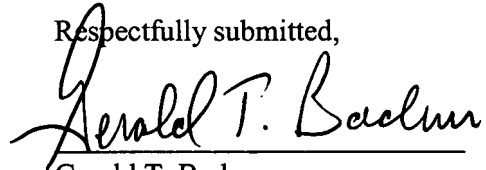
Furthermore, the Satoh et al. patent has been carefully considered by applicant. The Satoh et al. patent discloses an electronic imaging apparatus in which directories are set to be convenient for file access. The imaging apparatus includes an image pick-up circuit, an image data generating circuit, a data storage circuit for storing image data in the form of a file organized by a directory or sub-directory supported by a disc operating system, and an erase operation mode setter which selectively sets an operation mode of erase operation to be carried out. The passages cited by the Examiner, including column 44, lines 15-22, column 44, lines 48-52 and column 44, lines 31-33 of the Satoh et al. patent have been carefully considered, and applicant believes that in none of these passages are the features of applicant's claimed invention disclosed, that is, detecting the recording capacity of the recording medium and setting the unit areas to a larger size when the detected recording medium capacity is large, as defined specifically by amended apparatus Claim 1 and amended method Claim 6 and Claims 2-5 and 7-9 which depend directly or indirectly from amended apparatus Claim 1. As such, it is respectfully urged that Claims 1-9 patentably distinguish over the Takashi et al. published application and the Satoh et al. patent, taken alone or in combination, and are allowable.

In view of the foregoing amendments and remarks, entry of the amendments to Claims 1-4 and 6 and favorable reconsideration of these claims, favorable reconsideration of

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previously presented Claims 5 and 7-9 and allowance of the application with Claims 1-9 are respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, reading "Gerald T. Bodner", written over a horizontal line.

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